

Phase B      5 Questions      Correct answers are worth 10 points each.

Only the team being asked the questions is to be in the room. Each team will be asked these 5 questions. Answers are to be given by a team captain, but assistance may come from any team member. A question may be repeated only once. Answers must be started within 20 seconds. Partial credit may be given at the discretion of the judges. After one team has been questioned, the other team will enter the contest room and be asked the same 5 questions.

1. In a dairy cow, which of the following is the name of the opening that the digesta flows through as it enters the omasum?

- a) jejunum                      b) colon                      c) ileum                      d) reticulo-omasal orifice

ANS: d) reticulo-omasal orifice

2. In reference to dairy cattle genetics, which one of the following describes the term reliability?

- a) predictability of a genetic valuation      b) accuracy of a genetic valuation  
c) marketability of a genetic valuation

ANS: b) accuracy of a genetic valuation

3. What is the term for the process where, in the presence of light, chlorophyll-containing plants convert carbon dioxide and other elements into simple carbohydrates with oxygen also being produced?

ANS: Photosynthesis

4. In reference to dairy cow ear tags used in the National Animal Identification System, what does RFID stand for?

ANS: Radio Frequency Identification Device

5. Which of the following is the term for a large and complex protein material that is capable of causing disease and that reproduces only inside a host cell?

- a) Bacteria                      b) Protozoa                      c) Virus                      d) Salmonella

ANS: c) Virus

Phase C      20 Questions      Correct answers are worth 15 points each.

Both teams are in the room for Phase C. The first contestant to signal will answer the question within 5 seconds after being acknowledged by the moderator. Failure to do so will cost that team 10 points. Any contestant answering a question without being acknowledged by the moderator will lose 10 points. If an answer is incorrect, members of the other team will have the opportunity to answer the question without having it reread except for true/false, either or and yes or no type questions. If an answer is given in these types of questions, the question will be replaced with a tie breaker question, and given to the other team. No points are deducted for giving an incorrect answer. Team members are not allowed to discuss the answers in this phase. No partial credit is available in Phase C, except for bonus questions. If neither team can offer an answer to the question within 10 seconds, the moderator will give the answer and the question will be dropped but neither team will forfeit points.

1. In the reproductive system of a dairy cow, which organ produces estrogen?

ANS: Ovary

2. You send a sample of corn silage from your trench silo to the lab for nutrient analysis. The report lists the dry matter of the silage at 28%. How many pounds of dry matter are in one ton (2000 pounds) of the silage?

a) 680      b) 560      c) 600      d) 280

ANS: b) 560

3. Which of the following are the basic elements contained in carbohydrates?

a) nitrogen, oxygen and hydrogen      b) carbon, hydrogen and phosphorous  
c) carbon, hydrogen and oxygen

ANS: c) carbon, hydrogen and oxygen

4. Which of the following is the common name for BSE (Bovine Spongiform Encephalopathy)?

a) brucellosis      b) ketosis      c) foot and mouth disease      d) “mad cow disease”

ANS: d) “mad cow disease”

5. Which one of the following is caused by clostridium bacteria?

- a) acidosis            b) blackleg            c) nitrate poisoning            d) ketosis

ANS: b) blackleg

6. Which one of the following ranges is closest to the total ration crude protein requirement for early lactation dairy cows?

- a) 6 to 8%    b) 10 to 12%            c) 16 to 18%            d) 25 to 28%

ANS: c) 16 to 18%

7. Which one of the following is the name of the most desirable acid produced during corn silage fermentation that functions to preserve the silage when the silage is stored in a silo?

- a) hydrochloric acid    b) fumonisin            c) butyric acid            d) lactic acid

ANS: d) lactic acid

8. Which one of the following is a class of immunoglobulins (or antibodies) ?

- a) FSH            b) IgG            c) CLA

ANS: b) IgG

9. Which of the following does an elevated milk somatic cell count (SCC) indicate?

- a) acidosis    b) mastitis infection    c) ketosis

ANS: b) mastitis infection

10. Through a process called nitrogen fixation, legume forage crops can convert atmospheric nitrogen into nitrogenous compounds that are useful to plants. Which one of the following forages is classified as a legume?

- a) orchardgrass    b) fescue            c) corn silage            d) clover

ANS: d) clover

**11. Which one of the following has the greatest effect on the concentration of fiber in a growing plant?**

- a) amount of lime applied per acre                      b) stage of maturity of the plant  
c) weed control

ANS: b) stage of maturity of the plant

**12. What does the acronym NEFA stand for?**

ANS: Non- Esterified Fatty Acid

**13. On the PDCA Dairy Cow Unified Score Card, which category is allotted the fewest points?**

- a) Frame                      b) Dairy Character                      c) Body Capacity                      d) Feet and Legs  
e) Udder

ANS: c) Body Capacity (10 points)

**14. Which one of the following is the name of the acute infection caused by the spore-forming bacteria, *Bacillus anthracis*, that primarily affects livestock?**

- a) Rabies                      b) Johne's Disease                      c) Anthrax                      d) Foot and Mouth disease

ANS: c) Anthrax

**15. Of the following, which is the most important reason that we need to limit the time that a cow spends crowded in the holding area or pen on her way into the milking parlor?**

- a) to reduce foot rot                      b) to reduce heat stress                      c) to reduce metritis

ANS: b) to reduce heat stress

**16. Your veterinarian advises you to drench your cow with propylene glycol. What metabolic disorder are you trying to prevent?**

ANS: Ketosis (also accept Acetonemia)

**17. What is the primary function of the "honeycomb" lining of the reticulum?**

ANS: It serves to trap foreign objects that are eaten such as wire or nails (which helps to prevent hardware disease).

18. Which of the following describes a completely hydrogenated fat that contains no double bonds?

- a) unsaturated fat                      b) saturated fat                      c) vegetable oil

ANS: b) saturated fat

19. Which one of the following can be present at high levels in drought-stressed forages, especially following a rain, that can be toxic to dairy animals?

- a) phosphorous                      b) protein                      c) calcium                      d) nitrates

ANS: d) nitrates

20. What is the name of the enzyme that breaks down cellulose?

ANS: cellulase

**Bonus Questions      Each bonus question is worth 20 points.**

**Bonus questions may be earned in the toss-up round. To receive a bonus question, 3 different team members must correctly answer the toss-up questions. Bonus questions are not passed to the other team, nor are points deducted for an incomplete or incorrect answer to the question. Bonus question will be asked whenever 3 team members have answered toss-up questions correctly with the count kept individually for both teams within a match. Eligibility for bonus questions does not carry over to another match. The answers must come from the team captain but assistance can come from the other team members. Only the number or answers required by the bonus question will be accepted. Example: If the bonus has a four-part answer - the first four answers given by the team will be accepted. Answers to a bonus question must start within 20 seconds and be completed within 60 seconds.**

1. At first calving, what percentage of mature weight should first calf heifers weigh?

- a) 95%                      b) 85%                      c) 75%                      d) 65%

ANS: b) 85%

2. What is the term used to describe an animal that is born without horns?

ANS: Polled

3. On the PDCA Dairy Cow Unified Score Card, in which category is the "barrel"?

ANS: Body Capacity